

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44*bis*)

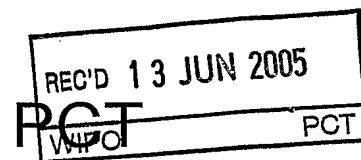
Applicant's or agent's file reference PHUS040074WO	FOR FURTHER ACTION	See item 4 below
International application No. PCT/IB2005/050294	International filing date (<i>day/month/year</i>) 25 January 2005 (25.01.2005)	Priority date (<i>day/month/year</i>) 28 January 2004 (28.01.2004)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant KONINKLIJKE PHILIPS ELECTRONICS, N.V.		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 <i>bis</i> .1(a).																								
2.	This REPORT consists of a total of 7 sheets, including this cover sheet. In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																								
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td style="width: 60%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application
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4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44 <i>bis</i> .3(c) and 93 <i>bis</i> .1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44 <i>bis</i> .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report 31 July 2006 (31.07.2006) Authorized officer <div style="text-align: center; font-size: 1.2em;">Cecile Chatel</div>
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PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY



To:

see form PCT/ISA/220

11/8

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/IB2005/050294

International filing date (day/month/year)
25.01.2005

Priority date (day/month/year)
28.01.2004

International Patent Classification (IPC) or both national classification and IPC
G06F1/03, H03B28/00

Applicant
KONINKLIJKE PHILIPS ELECTRONICS, N.V.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IB2005/050294

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IB2005/050294

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-20
	No: Claims	
Inventive step (IS)	Yes: Claims	1-20
	No: Claims	
Industrial applicability (IA)	Yes: Claims	
	No: Claims	1-20

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following document:

D1: US6281823

2. The independent claims do not meet the requirements for clarity of Article 6 PCT. This is explained in **Item VIII** below. Nevertheless, with reference to the present description and in the light of the available prior art, the application as a whole can be interpreted sufficiently to make the following observations upon the novelty and inventiveness of the claims.

3. The document D1 is regarded as being the closest prior art to the subject-matter of claim 1 and shows a Numerically Controlled Oscillator comprising a Phase Accumulator (112) which generates a sequence of words from an input phase increment value (118) successively added by an adder (116). The output is passed to a Decoder (104) representing certain pre-determined phase states (see D1, col.5, l.17-22), the output of which goes to a sine-weighted DAC, which generates a sinewave. This has the advantage of requiring less hardware than a conventional look-up table.

4. The subject-matter of claim 1 differs from this known Numerically Controlled Oscillator in that the generation method starts with a complex representation of a signal (a phasor) which is then rotated by a multiplication by a constant phasor (though see the comments under **Item VIII** below) to generate the next phasor. This is not known or suggested by the available prior art. Therefore the subject-matter of claim 1, insofar as it can be understood due to its lack of clarity, satisfies the requirement for novelty of Article 33(2) PCT.

5. It presently appears that a complex sinusoid generator implementing the method of claim 1 would involve less hardware and computing power than prior art generators. Therefore it appears that the subject-matter of claim 1, insofar as it can be understood, would satisfy the requirements for inventive step of Article 33(3) PCT.

6. Similar observations apply to the subject-matter of independent claims 11 and 16. Whilst the claims themselves do not meet the requirements of Article 6 PCT regarding

their clarity, the subject-matter contained therein, as far as it can be understood with reference to the prior art documents and the description, would appear to satisfy the requirements of Article 33(2,3) PCT.

Re Item VIII

Certain observations on the international application

7. The independent claims do not make it clear that the initial "current" phasor is multiplied by a quantity which is also a phasor of the form $a + jb$ (see the description, p.7 l. 8). This feature is essential for the definition of the invention.
8. The independent claims do not indicate the reference against which the "next phasor" is compared in order to determine the error factor. As this is discussed in some detail in the description, p.7, l.1 to p.8, l.17, it would appear that this error determination is essential to the definition of the invention.
9. Further, it is not at all clear how the phasor representations generated by the series of multiplications are formed into complex sinusoids. Component 31 of figure 1B, for example, seems to gather various signal paths, but it is not mentioned at all in the description. According to the requirements of Rule 11.13(l) PCT reference signs not appearing in the description shall not appear in the drawings, and vice versa. This requirement is not met in view of the reference sign 31. As it appears that this stage is essential to the generation of the output signal from its component parts, and there is no indication whatsoever in the description as to how this is to be achieved, the application as a whole does not satisfy the requirement of Article 5 PCT that the description shall disclose the invention in a manner sufficiently clear and complete for the invention to be carried out by a person skilled in the art. As the system according to the description and the claims cannot be implemented, it follows that it may not be industrially applicable, at least in its present state.
10. Since independent claims 1, 11 and 16 do not contain these features they do not meet the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/IB2005/050294

11. Further, claim 16 does not explicitly refer to determination of errors, merely to correcting them. Claim 16 therefore does not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined.

12. A document reflecting the prior art described on pages 1 and 2 is not identified in the description (Rule 5.1(a)(ii) PCT).